What is claimed is:

1. A computer operated method of supervision and operation of semiconductor facilities, referred to as the Operational Management Interface (OMI) system, comprising:

a user function, where human intervention with the OMI system is provided, said human intervention providing abilities to either submit data to the OMI system or by providing abilities to extract data from OMI system, whereby both functions of submission and extraction of data can be performed in either real-time mode and driven by the OMI system or can be driven by human intervention;

a user set-up function, forming an interface between an operator and the OMI system, where parameters and conditions of control, status and response are made available to the human operator for either entry of these quantities or for observation of theses quantities, whereby parameters and conditions of control are submitted the OMI system, whereby further parameters and conditions of status are provided by the OMI system, whereby further parameters and conditions of response are provided by the OMI system and comprise all data that relate to the operation of tools that are applied in a semiconductor processing facility or to therewith related facilities;

a user interface function, interpreting all data flowing between said user set-up mechanism of the computer operated

method and a Manufacturing Execution System (MES) function of the OMI system, said user interface function including functions of formatting data, of detecting faulty entries, of screening for and highlighting entries according to data type or data source, of providing feedback to said human setup mechanism of the OMI system, of acting as a screening agent for data that are supplied by the MES function the OMI system;

a Manufacturing Execution System (MES) function, said MES function performing all functions of implementing and processing specific system requirements as these requirements relate to direct control of the semiconductor processing tools in addition to support functions such as product scheduling, logistics supply of product flow through the manufacturing facilities, statistical analysis relating the product manufacturing, cost analysis functions and identifying abnormalities in the results that are obtained;

a tool control function which represents all tools, typically and preferably semiconductor processing tools, that are connected to and under control of the OMI system; and

hardware interfaces supported by two-way software protocols between said user function and said user set-up mechanism, between said user set-up mechanism and said user interface function, between said user interface function and said MES

function, between said MES function and said tool control function.

2. The method of claim 1, wherein said user function as an interface to and support by functional capabilities of said Operational Management Interface (OMI) system provides the ability to:

identify a tool that is under operator control;

identify a tool by position of the tool in the processing stream such as an upstream tool and a downstream tool;

identify a tool as a tool that is assigned to and located in other fabrication locations;

assign tool information to a tool on a per tool basis;

display tool information on a per tool basis;

have tool related information being displayed on one display device in real time;

supervise tool operations in real time on a per tool basis and directed from one display device;

execute tool operations in real time on a per tool basis and directed from one display device;

monitor tool status in real time on a per tool basis and directed from one display device;

prevent idling of a tool;

identify operational mode of a tool and differentiate between semi-automatic mode of operation whereby an operator schedules a lot and enters lot related data into the OMI system resulting in the lot being assigned for processing and manual and automatic mode of operation;

sub-sections of a tool such as a processing chamber are independently monitored; and

sub-sections of a tool such as a processing chamber are independently controlled.

3. The method of claim 1, wherein said Operational Management Interface (OMI) system provides software functions in support of said user function, said software functions in support of said user function comprising:

identifying and tracking of a tool that is under operator control;

identifying and tracking of a tool by position of the tool in the processing stream such as an upstream tool and a downstream tool;

identifying and tracking of a tool as a tool that is assigned to and located in other fabrication locations;

assigning and tracking tool information to a tool on a per tool basis;

displaying and tracking tool information on a per tool basis;

displaying tool related information on one display device in real time;

supervising and monitoring tool operations in real time on a per tool basis and directed from one display device;

executing and monitoring tool operations in real time on a per tool basis and directed from one display device;

monitoring tool status in real time on a per tool basis and directed from one display device;

preventing idling of a tool;

identifying and tracking operational mode of a tool and differentiating between semi-automatic mode of operation whereby an operator schedules a lot and enters lot related data into the OMI system resulting in the lot being assigned for processing and manual and automatic mode of operation;

monitoring sub-sections of a tool such as a processing chamber; and

controlling sub-sections of a tool such as a processing chamber.

4. The method of claim 1, including providing support software functions that are related to manufacturing semiconductor devices but that are not directly related to tool control and to the use and performance of semiconductor tools in a semiconductor manufacturing facility.

5. The method of claim 1, including functions of interfacing with other software or hardware functions that are not part of the OMI system of the invention and that are not directly related to tool control and the use and performance of semiconductor tools in a semiconductor manufacturing facility.

6. The method of claim 1, further extended by providing functions of statistical analysis in support of OMI functions.

7. The method of claim 1, further extended by providing functions based on probability theory in support of OMI functions.

8. The method of claim 1, further extended by providing functions of supplying tool data to at least one of said tools under control of the OMI system.

9. The method of claim 1, further extended by providing interface functions with software or hardware functions that are not part of the OMI system for supplying tool data to at least one of said tools under control of the OMI system.

10. The method of claim 1, further extended by providing software interfaces between more than one user of the OMI system.

11. A computer system for supervision and operation of semiconductor facilities, referred to as the Operational Management Interface (OMI) system, comprising:

a user function, where human intervention with the OMI system is provided, said human intervention providing abilities to either submit data to the OMI system or by providing abilities to extract data from OMI system, whereby both functions of submission and extraction of data can be performed in either real-time mode and driven by the OMI system or can be driven by human intervention;

a user set-up function, forming an interface between an operator and the OMI system, where parameters and conditions of control, status and response are made available to the human operator for either entry of these quantities or for observation of theses quantities, whereby parameters and conditions of control are submitted the OMI system, whereby further parameters and conditions of status are provided by the OMI system, whereby further parameters and conditions of response are provided by the OMI system and comprise all data that relate to the operation of tools that are applied in a semiconductor processing facility or to therewith related facilities;

a user interface function, interpreting all data flowing between said user set-up mechanism of the computer operated method and a Manufacturing Execution System (MES) function of the

OMI system, said user interface function including functions of formatting data, of detecting faulty entries, of screening for and highlighting entries according to data type or data source, of providing feedback to said human setup mechanism of the OMI system, of acting as a screening agent for data that are supplied by the MES function the OMI system;

a Manufacturing Execution System (MES) function, said MES function performing all functions of implementing and processing specific system requirements as these requirements relate to direct control of the semiconductor processing tools in addition to support functions such as product scheduling, logistics supply of product flow through the manufacturing facilities, statistical analysis relating the product manufacturing, cost analysis functions and identifying abnormalities in the results that are obtained;

a tool control function which represents all tools, typically and preferably semiconductor processing tools, that are connected to and under control of the OMI system; and

hardware interfaces supported by two-way software protocols between said user function and said user set-up mechanism, between said user set-up mechanism and said user interface function, between said user interface function and said MES function, between said MES function and said tool control function.

12. The computer system of claim 11, wherein said user function:

identifies a tool that is under operator control;

identifies a tool by position of the tool in the processing stream such as an upstream tool and a downstream tool;

identifies a tool as a tool that is assigned to and located in other fabrication locations;

assigns tool information to a tool on a per tool basis;

displays tool information on a per tool basis;

displays tool related information on one display device in real time;

supervises tool operations in real time on a per tool basis and directed from one display device;

executes tool operations in real time on a per tool basis and directed from one display device;

monitors tool status in real time on a per tool basis and directed from one display device;

prevents idling of a tool;

identifies operational mode of a tool and differentiate between semi-automatic mode of operation whereby an operator schedules a lot and enters lot related data into the OMI system resulting in the lot being assigned for processing and manual and automatic mode of operation;

monitors sub-sections of a tool such as a processing chamber are independently; and

independently controls sub-sections of a tool such as a processing chamber are independently controlled.

13. The method of claim 11, wherein said computer system provides software functions in support of said user function, said software functions in support of said user function comprising:

identifying and tracking of a tool that is under operator control;

identifying and tracking of a tool by position of the tool in the processing stream such as an upstream tool and a downstream tool;

identifying and tracking of a tool as a tool that is assigned to and located in other fabrication locations;

assigning and tracking tool information to a tool on a per tool basis;

displaying and tracking tool information on a per tool basis;

displaying tool related information on one display device in real time;

supervising and monitoring tool operations in real time on a per tool basis and directed from one display device;

executing and monitoring tool operations in real time on a per tool basis and directed from one display device;

monitoring tool status in real time on a per tool basis and directed from one display device;

preventing idling of a tool;

identifying and tracking operational mode of a tool and differentiating between semi-automatic mode of operation whereby an operator schedules a lot and enters lot related data into the OMI system resulting in the lot being assigned for processing and manual and automatic mode of operation;

monitoring sub-sections of a tool such as a processing chamber; and

controlling sub-sections of a tool such as a processing chamber.

14. The computer system of claim 11, further including support software functions that are related to manufacturing semiconductor devices but that are not directly related to tool control and to the use and performance of semiconductor tools in a semiconductor manufacturing facility.

15. The computer system of claim 11, further including interfacing with other software or hardware functions that are not part of the OMI system of the invention and that are not directly related to tool control and the use and performance of semiconductor tools in a semiconductor manufacturing facility.

16. The computer system of claim 11, further providing functions of statistical analysis in support of OMI functions.

17. The computer system of claim 11, further providing functions based on probability theory in support of OMI functions.

18. The computer system of claim 11, further providing functions of supplying tool data to at least one of said tools under control of the OMI system.

19. The computer system of claim 11, further providing interface functions with software or hardware functions that are not part of the OMI system for supplying tool data to at least one of said tools under control of the OMI system.

20. The computer system of claim 11, further providing software interfaces between more than one user of the OMI system.